
Network Control Center User Planning System (NCC UPS)

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Resource Allocation Concepts and Approaches**

00-1

DSTD
Code 520

Agenda

Ups System Overview
Scheduling Interfaces
Graphics scheduling Aid

Hardware / software Configuration

Unix Platforms running X11R4 and OSF Motif 1.1.1

Posix compliant with a few exceptions

Uses TAE Plus 4.1 - 5.0, A GUI builder developed by NASA

Software to run on various host CPUs

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Replace each of the current Mission Planning Terminals (MPTs) as the user interface to the NCC.

This interface includes:

- Interactive entry of TDRSS schedule requests**
- Processing of batch request from other systems**
- Transmission of requests to the NCC**
- Receipt of confirmed schedules from the NCC**
- Reporting to users**

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Major NCC UPS Functional Requirements

Provide input and validation of orbital data

Provide UPS database management

Provide interactive and batch input and validation of
schedule requests

Provide transmission of SARs to the NCC

Provide reception of NCC messages and reporting to users

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Interactive User Access Levels

- The Mission Coordinator:
 - Modifies database definitions
 - Adds and deletes users
 - Enters and modifies static data in the Translation
 - Map and User Environment Tables
- The Mission Scheduler:
 - Reads orbital data from tape
 - Generates schedule requests
 - Transmits SARs to the NCC
 - Generates reports and queries
- The Mission User:
 - Generates predefined reports
 - Reviews scheduling information

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- The UPS user:
 - Provides ISRs and other supporting data
 - May be one of two types:
 - Interactive
 - Electronic
- The NCC:
 - Receives SARs from the UPS
 - Transmits confirmed schedules, rejected requests, and schedule updates to the UPS

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- Supports interactive functions
 - Information window
 - System administration
 - Mission setup
 - Orbital data operations
 - Automatic schedule request generation
 - Specific schedule request generation
 - Mission database maintenance
 - Report generation
 - Database queries
 - Message transmission

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All Subsystems available from pulldown on information window

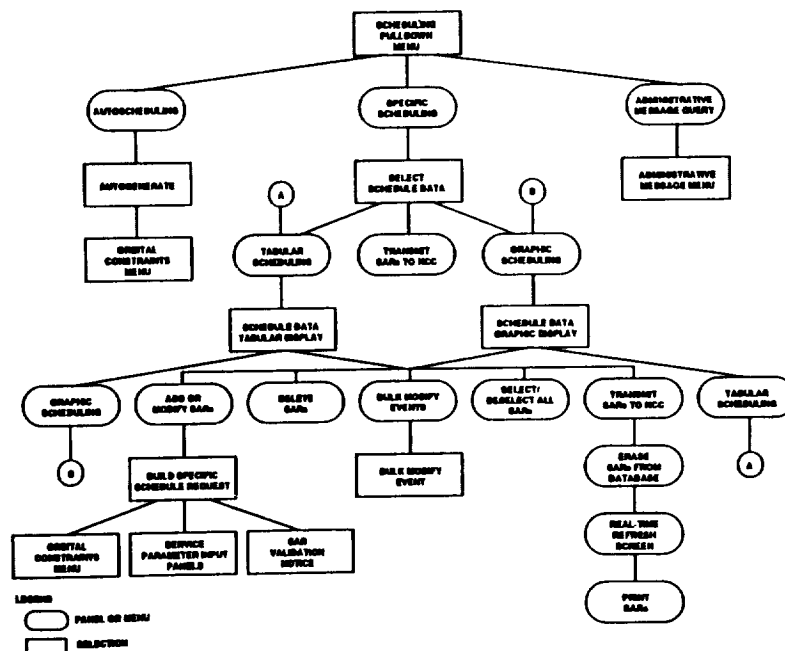
Attempted to limit interface depth to three levels where possible

Information which has been entered previously should default for lower level screens (e.g. start, stop time)

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Scheduling Screen Hierarchy



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- Autoscheduling
 - Autogenerate schedule request (autogenerate main panel)
 - Orbital constraints menu (for adjusting orbital constraints)
- Specific scheduling
 - Select schedule data (specific main panel)
 - Schedule data tabular display (for tabular scheduling)
 - Schedule data graphic display (for graphic scheduling)
 - Build specific schedule request (for adding/modifying SARs)
 - Orbital constraints menu (for adjusting orbital constraints)
 - Service parameter input panels (for editing respecifiable parameters)
 - SAR validation notice (for saving to database)
 - Bulk modify event (for bulk modifying SARs)

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Autogenerate Schedule Request Panel

Auto-Generate Schedule Request [?]

Period Covered: Start Time [] Stop Time [] (SC05)
(HHMMSS)

Exclusion Period: From [] To [] <-- [ADD]
(optional)(HHMMSS)

143100900 143103000 [REMOVE] [MODIFY]

SUR IDEN Station
A123456 ↑ TDR ↑
A123456 ↓ TDU ↑
TDS ↑

Prototype Event Id: [] or Alias: []

☒ Check Orbital constraints
☐ Adjust Orbital constraints

Repeat Cycle
☐ By Orbit: Every [] Orbit(s). ☒ Next Orbit (if necessary)
☐ By Time: Every [] (HHMMSS)

Repeat Cycle TOLERANCE Plus [] SAR Tolerance plus minus
(HHMMSS) Minus [] ☐ default [] [] (HHMMSS)
☐ TSV

[ENTER] [CANCEL]

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Build Specific Schedule Request Panel

Build Specific Schedule Request (SC3)

Event Start Time: 260150500 (DDHHMMSS) Duration: 2530 (MMSS) (optional)

Event Stop Time: 260153030 (DDHHMMSS)(optional)

SURIDEN Station Prototype EVENT ID: A30
or Alias: JATKED01
(blank for config. code)

Tolerance: plus minus
☒ default 2000 2000 (MMSS)
☐ TSV

☒ Check Orbital constraints ☐ Adjust Orbital constraints

Service Data Input

Config code (A00)	Alias	Relative Start (MMSS)	Relative Stop (MMSS)	Duration (MMSS)	Service type

Currently selected services:

A01	MAF1ES0P	000000	002500	002500	MAF
B01	MAF300t1	000030	002530	002500	MAF
T01	TKA01001	001500	002500	001000	TKA

ENTER CANCEL

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Select Schedule Data Panel

Select Schedule Data (SC16)

Selected Start : (DDHHMMSS)

Selected Stop : (DDHHMMSS)

or Duration : (DDHHMMSS)

SURIDEN Station Selection Criterion:

ALL AUTOGEN UNOKITED XMIT PENDING XMIT w/ NO RESULT XMITED w/ RESULT

CONFIRMED REJECTED DELETED GENERIC BULKMOD

TABLE GRAPHIC CANCEL

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Schedule Data Tabular Display Panel

Schedule Data Tabular Display REFRESH ON

Selected Start : (SC82)
Selected Stop :

Ref	Supiden	Station	Event Start	Event Stop	Duration	Source	Req Type	WPS Status	MCC Status	Prototype ID	Prototype Alias	Configuration codes
8	AD000000	T00	122/05:00:00	122/05:20:00	0002.00	Batch	Add	Exit				

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Bulk Modify Event (SC86)

Selection Criteria:

Selected period:

From (MM/DD/YYYY) To (MM/DD/YYYY)

Request Status:

☐ Request ☐ Confirmed ☐ ALL

Supiden Station

FROM TO

☐ Time Slip Interval: (MM/DD/YYYY)

☐ Station:

☐ Prototype ID:

☐ Prototype Alias:

☐ Configuration Code:

☐ Configuration Alias:

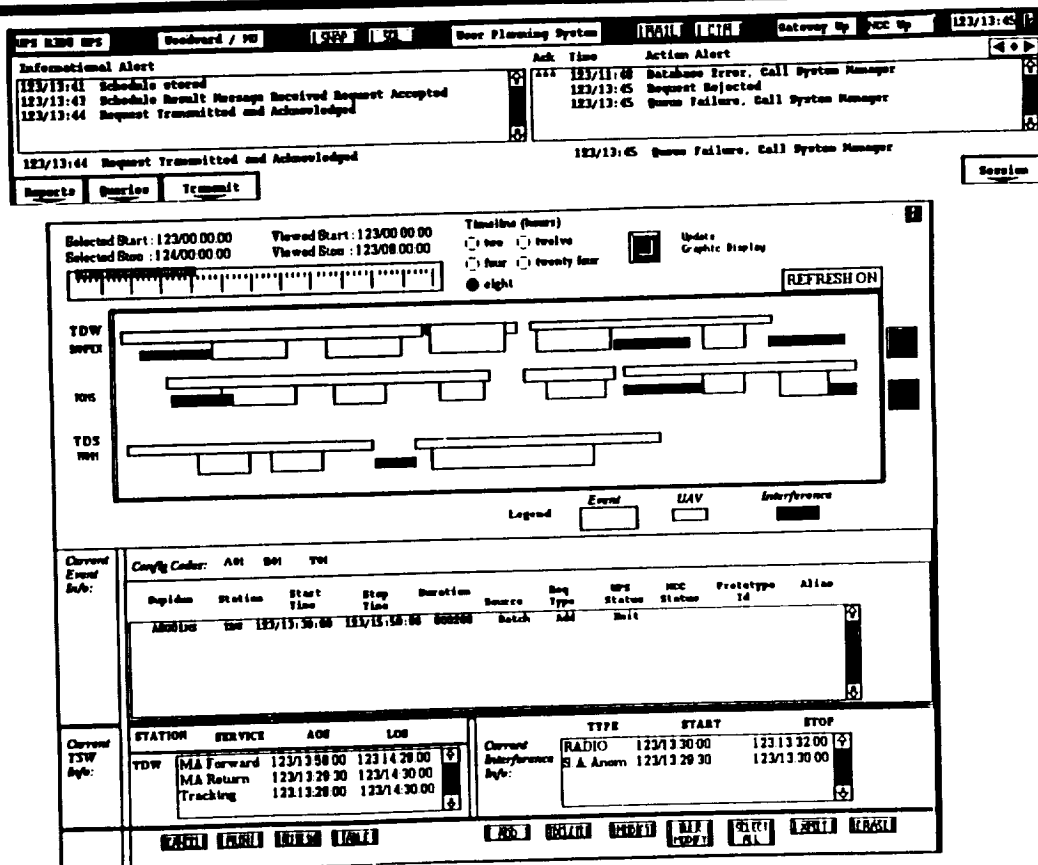
☐ SUPIDEN:

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Allow single or multiple event modification, deletion or insertion

Present tabular information in an easy to interpret format

Show interrelationships between services, events, interference and intermission conflicts for resources.

Provide selection / multiple selection via mouse and control key

Provide visual cues to differentiate TSWs, Events and Interferences.

Schedule Data Graphic Display

- Select/deselect single or multiple requests by clicking on graphic requests
- Provide action buttons (see select data tabular display panel)
- Change to tabular scheduling (Table option)
- Display TSW information for services related to a selected request (from the current event information window)
- Select display range based on viewed time
 - Select range of display using Radio buttons
 - Select start time using Viewed Start input field
 - Input Viewed Stop to override the timeline radio button set (optional)
 - Update graphic display to incorporate changes using Update Graphic Display button
 - Graphic display configuration depends on the number of missions and TDRSs used
 - Scroll graphic display using the slider mechanism

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